



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/585,041	06/12/2007	Ashok Kumar Gupta	U 016370-1	7898
140	7590	11/19/2007		
LADAS & PARRY 26 WEST 61ST STREET NEW YORK, NY 10023			EXAMINER CUTLIFF, YATE KAI RENE	
			ART UNIT	PAPER NUMBER
			1621	
			MAIL DATE	DELIVERY MODE
			11/19/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/585,041	Applicant(s) GUPTA ET AL.	
	Examiner Yate' K. Cutliff	Art Unit 1621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 June 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 1-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoo, (U.S. 2005/0080280 corresponds to WO 03//066567) in view of Yean et al. (Applied Organometallic Chemistry, 2000, vol. 14) and Basu et al. (U.S. 5,525,126).

Applicant claims a process for the preparation of fatty acid alkyl esters suitable for use as biodiesel, said process comprises the steps of: a) reacting fatty acid glycerides with an alcohol having 1-4 carbon atoms in the molar ratio of 3:1 to 30:1 of fatty acids and triglycerides respectively, at a temperature ranging between 70-300aC, pressure in the range of 1-30 bar, in presence of a organometalic catalytic compound of Tin with concentration of catalyst is in the range of 0.01 to 3 weight percent of the fatty acid glycerides; b) obtaining ester with glycerol; c) separating the glycerine from the fatty acid alkyl ester as immiscible phase by decantation; d) purifying the fatty acid alkyl esters by washing with water, and e) washed ester is treated with a basic absorbent to obtain biodiesel. The glycerides are selected from the group consisting of vegetable oil, animal oil, fatty acids and mixture thereof. The catalyst is selected from the group comprising dibutyl tin oxide and dicotyl tin oxide.

Yoo discloses a process for producing fatty acid alkyl esters in a single-phase continuous process involving the following steps and involves the reaction of an animal fat and/or vegetable oil and a lower alcohol. The reaction mechanism: 1) alkali catalyst is linked to ester group of fat and/or oil, which is relatively more acidic than the lower alcohol, to give an intermediate with increased reactivity; and, 2) transesterification between alcohol and reactive ester group of oil is followed. (see paragraph [44]). One of the catalysts that may be use in the reaction is an organometallic catalytic compound

of Tin (see paragraph [0040]). The process steps consist of reacting glycerides with lower alcohols at a ration of 1:6-60 in the presence of an organometallic catalyst in the range of 0.1 to 10%, the reaction temperature is 60-150°C at 1-10 bar. (see paragraph [0020]). The product of Yoo is suitable for use as a biodiesel.

Yoo fails to explicitly disclose the molar ratio of fatty acids and triglyceride of 3:1 to 30:1, that the organometallic tin catalyst is dibutyltin oxide or dioctyltin oxide, the use of an absorbent, nor the viscosity of the biodiesel obtained.

Yean et al, teaches the transesterification of tripalmitin, the dominant triglyceride in palm oil wherein the catalyst are dibutyltin oxide and dioctyltin oxide.

Basu et al. discloses drying and filtering after the reaction. (see 30 and 30 on Fig. 1).

Lastly, it is known in the art that fats and oils, of the plant and animal kingdom, are glycerol and fatty acids that are made up of one mole of glycerol and three moles of fatty acids and are commonly referred to as triglycerides. (Ma., et al. Bioresources Technology, vol. 70 pp. 1). Applicant, specifically claims the presence of fatty acid in the reaction. Ciaudelli discloses an esterification reaction where dibutyl tin oxide is the catalyst.

The remaining differences between the claimed invention and the prior, such as; recycling the excess alcohol, the acid value and the viscosity of the biodiesel obtained, and uses are a function, appear to be well within the purview of an ordinary artisan.

For the reasons set forth above, It would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to prepare a fatty acid alkyl

Art Unit: 1621

ester from a fatty acids and triglycerides as suggested by Yoo and tweaking the process by using the catalyst as suggested by Yean et al. and Ciaudelli, then wash the ester and treat with an absorbent in view of the teaching of Basu et al. to obtain an end product ester useful as a biodiesel.

Therefore, all the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods with no change in their respective functions, and the combination would have yielded predictable results to one of ordinary skill in the art at the time of the invention. *KSR International Co. v. Teleflex Inc.*, 550 U.S. ___, 82 USPQ2d 1385 (U.S. 2007).

Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yate' K. Cutliff whose telephone number is (571) 272-9067. The examiner can normally be reached on M-TH 8:30 a.m. - 5:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Yvonne Eyler can be reached on (571) 272 - 0871. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1621

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Yaté K. Cutliff
Patent Examiner
Group Art Unit 1621
Technology Center 1600


SAMUEL BARTS
PRIMARY EXAMINER
GROUP 1600